

LOCTITE STYCAST 2851MT

February 2013

PRODUCT DESCRIPTION

LOCTITE STYCAST 2851MT provides the following product characteristics:

Technology	Epoxy
Appearance	Blue liquid
Cure	Heat cure
Product Benefits	<ul style="list-style-type: none">• One component• High thermal conductivity• Low CTE• Ease of use• Low stress• Excellent chemical and solvent resistance
Operating Temperature	-55 to 155°C
Application	Encapsulant
Typical Assembly Applications	High voltage applications such as Power supplies, Rectifiers, Transformers and Coils

LOCTITE STYCAST 2851MT epoxy encapsulant is designed for general potting applications. LOCTITE STYCAST 2851MT has a slightly grainy consistency due to the filler size.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Brookfield Viscosity, ASTM D2393, mPa·s (cP):

Spindle 6, speed 2.5 rpm	140,000
Density, ASTM D792, g/cm ³	2.6
Shelf Life @ 5°C (from date of manufacture), days	137
Flash Point - See MSDS	

TYPICAL CURING PERFORMANCE

Cure Schedule

- 1 hours @ 120°C
- 2 hours @ 100°C
- 5 hours @ 80°C

Cure at any one of the recommended cure schedules.

For optimum performance, follow the initial cure with a post cure of 2 to 4 hours at maximum expected operating temperature.

The above cure profiles are guideline recommendations. Cure conditions (time and temperature) may vary based on customers' experience and their application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties

Hardness, Shore D, ASTM D2240	94
Water Absorption, ASTM D 570, %	0.06
Coefficient of Thermal Expansion, ASTM D3386, ppm/°C	30
Thermal Conductivity, ASTM D2214, W/(m-K)	1.9

Electrical Properties

Dielectric Constant @ 1 mHz, ASTM D150	5.43
Dissipation Factor @ 1 mHz, ASTM D150	0.002
Volume Resistivity @ 25 °C, ASTM D257, ohm-cm	>1×10 ¹⁵

TYPICAL PERFORMANCE OF CURED MATERIAL

Physical Properties:

Flexural Modulus, ASTM D790	N/mm ²	128
	(psi)	(18,600)
Compressive Strength, ASTM-D695	N/mm ²	193
	(psi)	(28,000)
Tensile Modulus, ASTM D412	N/mm ²	48
	(psi)	(7,000)

GENERAL INFORMATION

For safe handling information on this product, consult the Material Safety Data Sheet, (MSDS).

DIRECTIONS FOR USE

1. Complete cleaning of the components and substrates should be performed to remove contamination such as dust, moisture, salt and oils which can cause electrical failure, poor adhesion or corrosion in an embedded part.
2. Some separation of components is common during shipping and storage. For this reason, it is recommended that the contents of the shipping container be thoroughly mixed prior to use.
3. To ensure a void-free embedment, vacuum deairing or degassing should be performed to remove any entrapped air introduced during the mixing operation.
4. Pump-down or pull vacuum on the mixture to achieve an ultimate vacuum or absolute pressure of 1 to 5 torr or mm Hg. The foam will rise several times in the liquid height and then subside.
5. Continue vacuum deairing until most of the bubbling has ceased. This usually takes 3 to 10 minutes.
6. To facilitate deairing in difficult to deair materials, add 1 to 3 drops of an air release agent, such as ANTIFOAM 88 into 100 grams of mixture.
7. Pour mixture into cavity or mold.
8. Gentle warming of the mold or assembly reduces the viscosity. This improves the flow of the material into the unit having intricate shapes or tightly packed coils or components.
9. Further vacuum deairing in the mold may be required for critical applications.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage: 5°C. Storage below 5°C or greater than 25°C can adversely affect product properties.

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\text{N} \times 0.225 = \text{lb}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{N/mm}^2 \times 145 = \text{psi}$
 $\text{MPa} \times 145 = \text{psi}$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

Disclaimer

Note:

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

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